99TH CONGRESS
1st Session

HOUSE OF REPRESENTATIVES

REPORT
99-379

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AUTHORIZATION ACT, 1986

NOVEMBER 19, 1985.—Ordered to be printed

Mr. FUQUA, from the committee of conference, submitted the following

CONFERENCE REPORT

[To accompany H.R. 1714]

The committee of conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill (H.R. 1714) to authorize appropriations to the National Aeronautics and Space Administration for research and development, space flight, control and data communications, construction of facilities, and research and program management, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the House recede from its disagreement to the amendment of the Senate and agree to the same with an amendment as follows:

In lieu of the matter proposed to be inserted by the Senate amendment insert the following:

That this Act may be cited as the "National Aeronautics and Space Administration Authorization Act of 1986".

TITLE I—NASA AUTHORIZATION

SEC. 101. There is hereby authorized to be appropriated to the National Aeronautics and Space Administration to become available October 1, 1985:

(a) For "Research and development," for the following programs:

(1) Space station, $205,000,000;

(2) Space transportation capability development, $437,300,000;

(3) Physics and astronomy, $620,400,000;

(4) Life sciences, $68,000,000;

(5) Planetary exploration, $354,000,000;

(6) Space applications, $537,800,000;

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(7) Technology utilization, $11,100,000;

(8) Commercial use of space, $17,000,000;

(9) Aeronautical research and technology, $354,000,000;

(10) Space research and technology, $166,000,000; and

(11) Tracking and data advanced systems, $16,200,000.

(b) For "Space flight, control and data communications," for the following programs:

(1) Space shuttle production and operational capability, $961,500,000;

(2) Space transportation operations, $1,710,100,000; and

(3) Space and ground network, communications and data systems, $701,300,000.

(c) Except as provided in the last sentence of this subsection for "Construction of facilities," including land acquisition, as follows:

(1) Space transportation facilities at various locations as follows:

(A) Construction of orbiter modification and refurbishment facility, John F. Kennedy Space Center, $14,000,000;

(B) Construction of thermal protection system facility, John F. Kennedy Space Center, $3,600,000;

(C) Modifications for advanced technology engine test stand S-1C, George C. Marshall Space Flight Center, $6,500,000;

(D) Modification for enhanced life support systems testing, Lyndon B. Johnson Space Center, $1,100,000;

(E) Modifications to Pad A payload change-out room, John F. Kennedy Space Center, $2,200,000; and

(F) Modifications to space shuttle main engine support systems, National Space Technology Laboratories, $2,500,000.

(2) Space shuttle payload facilities at various locations as follows:

(A) Construction of payload control rooms, John F. Kennedy Space Center, $1,200,000; and

(B) Construction of spacecraft systems development and integration facility, Goddard Space Flight Center, $8,000,000.

(3) Construction of additions to research projects laboratory, Goddard Space Flight Center, $3,800,000;

(4) Construction of microdevices laboratory, Jet Propulsion Laboratory, $8,900,000;

(5) Construction of numerical aerodynamic simulation facility, Ames Research Center, $8,200,000;

(6) Modifications to the sixteen-foot transonic tunnel for improved productivity and research capability, Langley Research Center, $4,900,000;

(7) Modification of 64-meter antenna, DSS-14, Goldstone, California, $8,500,000;

(8) Modification of 64-meter antenna, DSS-43, Canberra, Australia, $8,900,00;

(9) Repair of facilities at various locations, not in excess of $750,000 per project, $22,000,000;

(10) Rehabilitation and modification of facilities at various locations, not in excess of $750,000 per project, $27,000,000;

(11) Minor construction of new facilities and additions to existing facilities at various locations, not in excess of $500,000 per project, $6,000,000; and

(12) Facility planning and design not otherwise provided for, $12,000,000.

Notwithstanding paragraphs (1) through (12), the total amount authorized by this subsection shall not exceed $139,300,000.

(d) For "Research and program management," $1,367,000,000, and such additional or supplemental amounts as may be necessary for increases in salary, pay, retirement, or other employee benefits authorized by law.

(e) Notwithstanding the provisions of subsection (h), appropriations hereby authorized for "Research and development" and "Space flight, control and data communications" may be used (1) for any items of a capital nature (other than acquisition of land) which may be required at locations other than installations of the Administration for the performance of research and development contracts, and (2) for grants to nonprofit institutions of higher education, or to nonprofit organizations whose primary purpose is the conduct of scientific research, for purchase or construction of additional research facilities; and title to such facilities shall be vested in the United States unless the Administrator determines that the national program of aeronautical and space activities will best be served by vesting title in any such grantee institution or organization. Each such grant shall be made under such conditions as the Administrator shall determine to be required to ensure that the United States will receive therefrom benefit adequate to justify the making of that grant. None of the funds appropriated for "Research and development" and "Space flight, control and data communications" pursuant to this Act may be used in accordance with this subsection for the construction of any major facility, the estimated cost of which, including collateral equipment, exceeds $500,000, unless the Administrator or the Administrator's designee has notified the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate of the nature, location, and estimated cost of such facility.

(f) When so specified and to the extent provided in an appropriation Act, (1) any amount appropriated for "Research and development," for "Space flight, control and data communications" or for "Construction of facilities" may remain available without fiscal year limitation, and (2) maintenance and operation of facilities and support services contracts may be entered into under the "Research and program management" appropriation for periods not in excess of twelve months beginning at any time during the fiscal year.

(g) Appropriations made pursuant to subsection (d) may be used, but not to exceed $35,000, for scientific consultations or extraordinary expenses upon the approval or authority of the Administrator, and the Administrator's determination shall be final and conclusive upon the accounting officers of the Government.

(h) Of the funds appropriated pursuant to subsections (a), (b), and (d), not in excess of $100,000 for each project, including collateral

equipment, may be used for construction of new facilities and additions to existing facilities, and for repair, rehabilitation, or modification of facilities: Provided, That, of the funds appropriated pursuant to subsection (a) or (b), not in excess of $500,000 for each project, including collateral equipment, may be used for any of the foregoing for unforeseen programmatic needs.

SEC. 102. Authorization is hereby granted whereby any of the amounts prescribed in paragraphs (1) through (11), inclusive, of section 101(c)—

(1) in the discretion of the Administrator or the Administrator's designee, may be varied upward 10 percent, or

(2) following a report by the Administrator or the Administrator's designee to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on the circumstances of such action, may be varied upward 25 percent, to meet unusual cost variations, but the total cost of all work authorized under such paragraphs shall not exceed the total of the amounts specified in such paragraphs.

SEC. 103. Not to exceed one-half of 1 per centum of the funds appropriated pursuant to section 101(a) or 101(b) may be transferred to and merged with the "Construction of facilities" appropriation, and, when so transferred, together with $10,000,000 of funds appropriated pursuant to section 101(c) (other than funds appropriated pursuant to pragraph (12) of such section) shall be available for expenditure to construct, expand, and modify laboratories and other installations at any location (including locations specified in section 101(c)), if (1) the Administrator determines such action to be necessary because of changes in the nationl program of aeronautical and space activities or new scientific or engineering developments, and (2) the Administrator determines that deferral of such action until the enactment of the next authorization Act would be inconsistent with the interest of the Nation in aeronautical and space activities. The funds so made available may be expended to acquire, construct, convert, rehabilitate, or install permanent or temporary public works, including land acquisition, site preparation, appurtenances, utilities, and equipment. No portion of such sums may be obligated for expenditure or expended to construct, expand, or modify laboratories and other installations unless a period of thirty days has passed after the Administrator or the Administrator's designee has transmitted to the Speaker of the House of Representatives and to the President of the Senate and the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a written report containing a full and complete statement concerning (i) the nature of such construction, expansion, or modification, (ii) the cost thereof including the cost of any real estate action pertaining thereto, and (iii) the reason why such construction, expansion, or modification is necessary in the national interest.

SEC. 104. Notwithstanding any other provision of this Act, no amount appropriated pursuant to this Act may be used for any program—

(1) deleted by the Congress from requests as originally made either to the Committee on Commerce, Science, and Transporta-

tion of the Senate or the Committee on Science and Technology of the House of Representatives;

(2) in excess of the amount actually authorized for that particular program by subsections (a), (b), and (d) of section 101; and

(3) which has not been presented to either such committee,

unless a period of thirty days has passed after the receipt by the Speaker of the House of Representatives and the President of the Senate and each such committee of notice given by the Administrator or the Administrator's designee containing a full and complete statement of the action proposed to be taken and the facts and circumstances relied upon in support of such proposed action.

SEC. 105. It is the sense of the Congress that it is in the national interest that consideration be given to geographical distribution of Federal research funds whenever feasible, and that the National Aeronautics and Space Administration should explore ways and means of distributing its research and development funds whenever feasible.

SEC. 106. No civil space station authorized under section 101(a)(1) may be used to carry or place in orbit any nuclear weapon or any other weapon of mass destruction, to install any such weapon on any celestial body, or to station any such weapon in space in any other manner. This civil space station may be used only for peaceful purposes.

SEC. 107. On and after the date of enactment of this Act, the Inspector General of the National Aeronautics and Space Administration may administer to or take from any person an oath, affirmation or affidavit, whenever necessary in the performance of the functions assigned by the Inspector General Act of 1978 (5 U.S.C. App.). Any such oath, affirmation or affidavit, when administered or taken by or before an investigator or such other employee of the Office of the Inspector General as may be designated by the Inspector General, shall have the same force and effect as if administered or taken by or before an officer having a seal.

SEC. 108. The authorization for space shuttle production and operational capability includes provisions for the production activities necessary to provide for a fleet of four space shuttle orbiters, including the production of structural and component spares, necessary to ensure confident and cost effective operation of the four orbiter fleet as well as provisions for maintaining production readiness for a fifth orbiter vehicle.

SEC. 109. Section 204(c) of the National Aeronautics and Space Administration Authorization Act, 1985 (Public Law 98-361; 98 Stat. 430) is amended by striking "twelve" and inserting in lieu thereof "18".

SEC. 110. Within ninety days of the date of enactment of this Act, the Administrator shall review those recommendations of the President's Private Sector Survey on Cost Control and such other recommendations as may be included in the Office of Management and Budget report "Management of the United States Government—1986" and shall submit a report to the Speaker of the House of Representatives and the President of the Senate and the Committee on Science and Technology of the House of Representatives and the

Committee on Commerce, Science, and Transportation of the Senate on the implementation status of each such recommendation which affects the National Aeronautics and Space Administration and which are within the authority and control of the Administrator.

SEC. 111. The Administrator shall initiate an immediate feasibility study to ensure flight opportunities for a diverse segment of the American public, including a physically disabled American.

SEC. 112. The Administrator shall examine and report to the Congress on the feasibility of providing space shuttle launch services on a basis of royalty recovery over the economic life of commercial products produced or processed in space.

SEC. 113. The Administrator shall conduct a study and report to the Congress on a proposed pricing policy for certain services such as on-orbit service, repair or recovery of spacecraft.

SEC. 114. (a) In accordance with the provisions of this section, during fiscal year 1986 the National Aeronautics and Space Administration shall defer payment to the Federal Financing Bank of the amount attributable to principal for which the Administration is obligated during such fiscal year as a result of the contract regarding tracking and data relay satellite services (NAS 5-25,000) entered into under section 6 of the National Aeronautics and Space Administration Authorization Act, 1978 (42 U.S.C. 2463).

(b) The amount of any payment deferred under subsection (a) shall be added to the amount of principal for which the Administration is obligated during fiscal year 1993 as a result of such contract. After the addition of such amount, if the total amount of repayments and prepayments under such contract for which the Administration is obligated during fiscal year 1993 exceeds the total amount of repayments and prepayments under such contract for which the Administration was obligated during fiscal year 1992, the Administration may defer payment of such excess until fiscal year 1994.

(c) The Administrator of the National Aeronautics and Space Administration is authorized to renegotiate such contract, if the Administrator determines that such renegotiation is necessary to enable the Administration to defer payments as provided in this section.

SEC. 115. The President shall submit to the Congress at the earliest practicable date, but not later than May 1, 1986, a report on any action taken with respect to the establishment in 1992 of an International Space Year. Such report shall include descriptions of possible international missions and related research and educational activities and such other activities as the President may deem appropriate.

TITLE II—SHUTTLE PRICING POLICY FOR COMMERCIAL AND FOREIGN USERS

SEC. 201. The Congress finds and declares that—

(1) the Space Transportation System is a vital element of the United States space program, contributing to the United States leadership in space research, technology, and development;

(2) the Space Transportation System is the primary space launch system for both United States national security and civil government missions;

(3) the Space Transportation System contributes to the expansion of United States private sector investment and involvement in space and therefore should serve commercial users;

(4) the availability of the Space Transportation System to foreign users for peaceful purposes is an important means of promoting international cooperative activities in the national interest and in maintaining access to space for activities which enhance the security and welfare of mankind;

(5) the United States is committed to maintaining world leadership in space transportation;

(6) making the Space Transportation System fully operational and cost effective in providing routine access to space will maximize the national economic benefits of the system; and

(7) national goals and the objectives for the Space Transportation System can be furthered by a stable and fair pricing policy for the Space Transportation System.

SEC. 202. The purpose of this title is to set the reimbursement pricing policy for the Space Transportation System for commercial and foreign users which is consistent with the findings included in section 201, encourages the full and effective use of space, and is designed to achieve the following goals—

(1) the preservation of the role of the United States as a leader in space research, technology, and development;

(2) the efficient and cost effective use of the Space Transportation System;

(3) the achievement of greatly increased commercial space activities; and

(4) the enhancement of the international competitive position of the United States.

SEC. 203. For purposes of this title, the term—

(1) "Administrator" means the Administrator of the National Aeronautics and Space Administration; and

(2) "additive cost" means the average direct and indirect costs to the National Aeronautics and Space Administration of providing additional flights of the Space Transportation System beyond the costs associated with those flights necessary to meet the space transportation needs of the United States Government.

SEC. 204. (a) The Administrator shall establish and implement a pricing system to recover reimbursement in accordance with the pricing policy under section 202 from each commercial or foreign user of the Space Transportation System, which except as provided in subsections (c), (d), and (e) shall include a base price of not less than $74,000,000 for each flight of the Space Transportation System in 1982 dollars.

(b) Each year the Administrator shall submit to the President of the Senate, the Speaker of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Science and Technology of the House of Representatives, a report, transmitted contemporaneously with the annual budget request of the President, which shall inform the Congress

how the policy goals contained in section 202 are being furthered by the shuttle price of foreign and commercial users.

(c)(1) If at any time the Administrator finds that the policy goals contained in section 202 are not being achieved, the Administrator shall have authority to reduce the base price established in subsection (a) after forty-five days following receipt by the President of the Senate, the Speaker of the House, the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Science and Technology of the House of Representatives of a notice by the Administrator containing a description of the proposed reduction together with a full and complete statement of the facts and circumstances which necessitate such proposed reduction.

(2) In no case shall the minimum price established under subsection (c)(1) be less than additive cost.

(d) The Administrator may set a price lower than the price determined under subsection (a) or (c), or provide no-cost flights, for any commercial or foreign user of the Space Transportation System who is involved in research, development or demonstration programs with the National Aeronautics and Space Administration.

(e) Notwithstanding the provisions of subsection (a), the Administrator shall have the authority to offer reasonable customer incentives consistent with the policy goals in section 202.

SEC. 205. This title shall apply to flights of the Space Transportation System beginning on and after October 1, 1988.

TITLE III—OFFICE OF COMMERCIAL SPACE TRANSPORTATION

SEC. 301. Section 24 of the Commercial Space Launch Act (Public Law 98-575; 98 Stat. 3064) is amended by adding at the end thereof the following: "There is authorized to be appropriated to the Secretary to carry out this Act $586,000 for fiscal year 1986.".

And the Senate agree to the same.

DON FUQUA,
GEORGE E. BROWN, Jr.,
BILL NELSON,
MICHAEL A. ANDREWS,
ROBERT TORRICELLI,
MANUEL LUJAN, Jr.,
ROBERT G. WALKER,
TOM LEWIS,
Managers on the Part of the House.

JOHN C. DANFORTH,
SLADE GORTON,
BARRY GOLDWATER,
ERNEST HOLLINGS,
DON RIEGLE,
Managers on the Part of the Senate.

JOINT EXPLANATORY STATEMENT OF THE COMMITEE OF CONFERENCE

The managers on the part of the House and the Senate at the conference on the disagreeing votes of the two Houses on the amendment of the Senate to the bill H.R. 1714 to authorize appropriations to the National Aeronautics and Space Administration for fiscal year 1986 for Research and Development, Space Flight, Control and Data Communications, Construction of Facilities, and Research and Program Management, and for other purposes submit the following joint statement to the House and the Senate in explanation of the disposition of the differences agreed upon by managers and recommended in the accompanying conference report.

NASA FISCAL YEAR 1986 BUDGET

Bill section/program	Budget request	House action	Senate action	Committee of conference
Research and development:				
1(a)(1) Space station	230.0	230.0	200.0	205.0
1(a)(2) Space transportation capability development	459.3	444.3	477.2	437.3
1(a)(3) Physics and astronomy	630.4	637.4	608.4	620.4
1(a)(4) Life sciences	72.0	72.0	68.0	68.0
1(a)(5) Planetary exploration	359.0	359.0	349.0	354.0
1(a)(6) Space applications	551.8	550.8	508.0	537.8
1(a)(7) Technology utilization	11.1	11.1	9.5	11.1
1(a)(8) Space commercialization	30.0	20.0	16.5	17.0
1(a)(9) Aeronautical research and technology	354.0	354.0	350.4	354.0
1(a)(10) Space research and technology	168.0	168.0	154.0	166.0
1(a)(11) Tracking and data acquisition	16.2	16.2	14.8	16.2
Total, research and development	2,881.8	2,862.8	2,755.8	2,786.8
Space flight, control and data communication:				
1(b)(1) Shuttle production and operational capability	976.5	1,011.5	941.5	961.5
1(b)(2) Space transportation operations	1,725.1	1,715.1	1,700.1	1,710.1
1(b)(3) Space ground network	808.3	803.3	745.3	701.3
Total, space flight control and data communications	3,509.9	3,529.9	3,386.9	3,372.9
1(c) Construction of facilities	149.3	148.3	139.3	139.3
1(d) Research and program management	1,345.0	1,300.0	1,370.0	1,367.0
Grand total	7,886.0	[1] 7,510.7	7,652.0	7,666.0

[1] Total reflects 5 percent general reduction

The points in disagreement and the resolution of them are as follows:

1. The House bill included an unspecified general reduction of $375,300,000 which could, for example, be taken proportionately or from any line item in the bill.

The Senate bill did not contain a comparable provision.

The conference agreement adopts the Senate position.

2. NASA requested $2,881,800,000 for research and development programs.

The House authorized $2,862,800,000 for research and development programs.

The Senate authorized $2,755,800,000 for those programs.

The conference agreement authorizes $2,786,800,000 for research and development programs, with individual line items resolved as follows:

a. Space station

NASA requested $230,000,000 for Space Station activities for fiscal year 1986.

The House authorized the full NASA request.

The Senate authorized $200,000,000 with a general reduction of $30 million.

The conference agreement authorizes $205,000,000 for space station activities for fiscal year 1986.

b. Space transportation capability development

NASA requested $459,300,000.

The House authorized $444,300,000, a decrease of $15,000,000 as follows:

Spacelab	−$5,000,000
Payload operations and support equipment	−3,000,000
Tethered satellite system	−7,000,000

The Senate authorized $477,200,000, an increase of $17,900,000 as follows:

Centaur development cost overruns	+$52,000,000
Tethered satellite system	−7,000,000
Orbital maneuvering vehicle	−15,000,000
General reduction	−12,100,000

The conference agreement authorizes $437,300,000, a decrease of $22,000,000 from the original NASA request, as follows:

Payload operations and support equipment	−$3,000,000
Tethered satellite system	−7,000,000
Orbital maneuvering vehicle	−12,000,000

c. Physics and astronomy

NASA requested $630,400,000.

The House authorized $637,400,000, an increase of $7,000,000 as follows:

Advanced x ray astrophysics facility	+$2,000,000
Space infrared telescope facility [SIRTF]	+1,000,000
Gravity probe B	+4,000,000

The Senate authorized $608,400,000, a decrease of $22,000,000 as follows:

Solar optical telescope	−$15,000,000
General reduction	−7,000,000

The conference agreement authorizes $620,400,000, a decrease of $10,000,000 as follows:

Advanced x ray astrophysics facility	+$2,000,000
Gravity probe B	+3,000,000
Solar optical telescope	−15,000,000

d. Life sciences

NASA requested $72,000,000.

The House authorized the full NASA request.

The Senate authorized $68,000,000, with a general reduction of $4,000,000.

The conference agreement adopts the Senate position.

e. Planetary exploration

NASA requested $359,000,000.

The House authorized the full NASA request.

The Senate authorized $349,000,000, a decrease of $10,000,000 as follows:

Mars Observer Program [MGCO]	−$10,000,000

The conference agreement authorizes $354,000,000, a decrease of $5,000,000, as follows:

Mars Observer Program [MGCO]	−$5,000,000

f. Space applications

NASA requested $551,800,000.

The House authorized $550,800,000, a decrease of $1 million as follows:

Ocean Topography Experiment [TOPEX]	+$4,000,000
International Solar Terrestrial Physics [ISTP] Program	+3,000,000
Scatterometer instrument development	−8,000,000

The Senate authorized $508,000,000, a decrease of $43,800,000, as follows:

Upper Atmosphere Research Satellite Program	−$20,000,000
Scatterometer Program	−5,000,000
Advanced communications technology satellite	−10,000,000
General reduction	−8,800,000

The conference agreement authorizes $537,800,000, a decrease of $14,000,000, as follows:

International Solar Terrestrial Physics [ISTP] Program	+$2,000,000
Ocean Topography Experiment [TOPEX]	+2,000,000
Advanced communications technology satellite	−5,000,000
Scatterometer Program	−5,000,000
Upper Atmospheric Research Satellite Program	−5,000,000
Materials processing in space	+2,000,000
General reduction	−5,000,000

With respect to the $2M augmentation of the materials processing in space program, the conferees believe that this area represents one of the most promising uses of the Space Station and hence should receive a greater amount of emphasis at this time. The conferees believe that it is appropriate to place a greater focus on understanding the fundamental role of gravity in physical processes. Basic research which leads to such an understanding will have the most beneficial effect in maturing the microgravity sciences at the pace needed for a robust and productive Space Station program.

In the Space Science and Applications Program areas, Advanced Technology Development funds are of great importance in accelerating projects to the new start phase. The conferees believe that it

is appropriate for NASA to reexamine its potential new starts in a realistic manner with a view towards applying Advanced Technology Development funds to those candidates having the highest probability of achieving new starts. As was pointed out in the Committee Views accompanying the FY 1986 House Authorization Bill, (H. Rept. 99-32), Advanced Technology Development funds are a precious resource that must achieve the maximum amount of leverage.

g. Technology utilization

NASA requested $11,100,000.

The House authorized the full NASA request.

The Senate authorized $9,500,000, a decrease of $1,600,000 reflecting a general reduction.

The conference agreement adopts the House position.

h. Commercial use of space

NASA requested $30,000,000.

The House authorized $20,000,000, a decrease of $10,000,000 reflecting a general reduction.

The Senate authorized $16,500,000, a decrease of $13,500,000 reflecting a general reduction.

The conference agreement authorizes $17,000,000, a decrease of $13,000,000 reflecting a general reduction.

i. Aeronautical research and technology

NASA requested $354,000,000.

The House authorized the full NASA request, which includes:

Altitude wind tunnel (cap)	$3,500,000
Approximate reduction	(−500,000)
Oblique wing flight test	−1,000,000
Fluid and thermal physics R&T/wind tunnel test techniques	−1,400,000
Highspeed aeronautics/hypersonic propulsion (approximate)	+3,000,000

The Senate authorized $350,400,000, a decrease of $3,600,000 as follows:

Altitude wind tunnel planning	−$4,000,000
Rotorcraft research and technology	+400,000

The conference agreement authorizes $354,000,000, with the following modifications:

Altitude wind tunnel (cap)	$3,500,000
Approximate reduction	(−500,000)
Oblique wing flight test	−1,000,000
Fluid and thermal physics R&T/wind tunnel test techniques	−1,400,000
Rotorcraft R&T	+400,000
Highspeed aeronautics/hypersonic propulsion (approximate)	+2,500,000

j. Space research and technology

NASA requested $168,000,000.

The House authorized the full NASA request.

The Senate authorized $154,000,000, a decrease of $14,000,000 reflecting a general reduction.

The conference agreement authorizes $166,000,000, a decrease of $2,000,000 reflecting a general reduction.

k. Tracking and data advanced systems

NASA requested $16,200,000.

The House authorized the full NASA request.

The Senate authorized $14,800,000, a decrease of $1,400,000 reflecting a general reduction.

The conference agreement authorizes $16,200,000.

3. NASA requested $3,509,900,000 for space flight, control and data communications.

The House authorized $3,529,900,000 for space flight, control and data communications.

The Senate authorized $3,386,900,000 for these programs.

The conference agreement authorizes $3,372,900,000 for space flight, control, and data communications with individual line items resolved as follows:

a. Shuttle production and operational capability

NASA requested $976,500,000.

The House authorized $1,011,500,000, an increase of $35,000,000 as follows:

Orbiter (structural spares)	+$45,000,000
Launch and Mission support	−5,000,000
Changes and systems upgrading	−5,000,000

The Senate authorized $941,500,000, a decrease of $35,000,000 as follows:

Structural spares	−$10,000,000
Changes and systems upgrading	−25,000,000

The conference agreement authorizes $961,500,000 a decrease of $15,000,000 as follows:

Launch and mission support	−$5,000,000
Changes and systems upgrading	−10,000,000

b. Space transportation operations

NASA requested $1,725,100,000.

The House authorized $1,715,100,000, a decrease of $10,000,000 as follows:

Shuttle operations	−$10,000,000

The Senate authorized $1,700,100,000, a decrease of $25,000,000 reflecting a general reduction.

The conference agreement authorizes $1,710,100,000, a decrease of $15,000,000 reflecting a general reduction. It is the opinion of the conferees that NASA should make every effort to reduce the cost of operating the space transportation system. The conferees expect these reductions to be achieved through the increased efficiencies that should result as the Space Transportation System continues to grow toward operational maturity. In no case is it expected that these savings would be attained through dramatic reductions in crew training or the decreased use of mission simulators.

c. Space and ground network, communications, and data systems

NASA requested $808,300,000.

The House authorized $803,300,000, a decrease of $5,000,000 reflecting a general reduction.

The Senate authorized $745,300,000, a decrease of $63,000,000 as follows:

Deferral of TDRSS principal payment	−$107,000,000
TDRSS Program	+48,000,000
General reduction	−4,000,000

The conference agreement authorizes $701,300,000, a reduction of $107,000,000 as follows:

Deferral of TDRSS principal payment	−$107,000,000

4. Construction of facilities.

NASA requested $149,300,000.

The House authorized $148,300,000, a decrease of $1,000,000 reflecting a general reduction.

The Senate authorized $139,300,000, a decrease of $10,000,000 reflecting a general reduction.

The conference agreement adopts the Senate position. The conferees agreed that most of the cut should be taken by deleting a single project.

5. Research and program management.

NASA requested $1,345,000,000.

The House authorized $1,300,00,000, a decrease of $45,000,000 reflecting a general reduction.

The Senate authorized $1,370,000,000, an increase of $25,000,000 reflecting a general reduction of $17,000,000 and an addition of $42,000,000 for civil service pay.

The conference agreement authorizes $1,367,000,000, an increase of $22,000,000 reflecting a general reduction of $20,000,000 and an addition of $42,000,000 for civil service pay.

6. The Senate bill prohibits the carrying to or placement in orbit by a civilian space station of any nuclear weapon or other weapon of mass destruction. The Senate bill also states the civil space station may be used only for peaceful purposes.

The House bill does not contain a comparable provision.

The conference agreement adopts the Senate position.

7. The House bill includes language providing that Space Shuttle production and operational capability be sufficient to provide for a four orbiter fleet, including the production of structural and component spares, and to maintain production readiness for a fifth orbiter vehicle.

The Senate bill does not contain a comparable provision.

The conference agreement adopts the House position, as amended.

8. *Advanced high speed aerospace vehicle.*

The conferees believe that emerging vehicle technologies offer the potential for achieving revolutionary advances in both aeronautical and space systems. Every effort should be made by NASA to support the development and demonstration of these technologies at the earliest possible date.

9. The House bill requires the NASA Administrator to review those recommendations contained in the President's Private Sector Survey on Cost Control and the OMB report "Management of the United States Government—1986" as are pertinent to NASA and to report on their implementation status within ninety days of enactment.

The Senate bill does not contain a comparable provision.

The conference agreement adopts the House position.

10. The House bill requires the Administrator to undertake study and planning efforts to ensure a timely flight opportunity for a physically disabled American.

The Senate bill does not contain a comparable provision.

The conference agreement requires the Administrator to initiate an immediate feasibility study to ensure flight opportunities for a diverse segment of the American public including a physically disabled American.

11. The Senate bill defers NASA's fiscal year 1986 principal payment pursuant to a TDRSS loan agreement, of $107,000,000 to the Federal Financing Bank.

The House bill does not contain a comparable provision.

The conference agreement adopts the Senate position.

12. The House bill requires the NASA Administrator to study the feasibility of providing Space Shuttle launch services on a basis of royalty recovery.

The Senate bill does not have a comparable provision.

The conference agreement adopts the House position.

13. The House bill requires the Administrator to study a pricing policy for service such as on-orbit service and spacecraft repair.

The Senate bill does not contain a comparable provision.

The Conference agreement adopts the House position.

14. *National Commission on Space.*

Both the House and Senate bills extended the life of the National Commission on Space for six months because of a delay in appointing the commissioners. In recognition of this, the conferees agree that no more than $400,000 may be needed and shall be provided through the regular reprogramming authority contained in the bill.

15. *International Space Year.*

It is the sense of the conferees that the year 1992 is ideally suited to the establishment of an International Space Year (ISY). The year 1992 marks the five hundredth anniversary of the discovery of America by Christopher Columbus. Spain will commemorate the discovery of America by launching an Hispanic communications satellite in 1992. Moreover, 1992 is the thirty-fifth anniversary of the International Geophysical Year (IGY), when the first artificial satellites were launched, thus marking the beginning of the space age. As a sequel to the IGY, an International Geosphere/Biosphere program is planned for the early 1990's, but its space activities will be limited to Earth observation. The conferees believe that space exploration has made enormous strides since the IGY and deserves concerted worldwide commemorative recognition and engagement. In addition to providing commemorative attention, the conferees believe that an International Space Year in 1992 could help maximize budgetary efficiency and scientific gain.

It is the sense of the conferees that the President should endorse the concept of an International Space Year for 1992 and consider the possibility of discussing the ISY with other foreign leaders. In addition, the Administrator of NASA in asscciation with other relevant public and private agencies, should initiate interagency and international discussions that explore the opportunities for an ISY

in 1992. Such discussions should address possible missions and research and educational activities of an international character, including the possible inclusion of current plans and programs into an ISY framework.

The conferees have agreed on the language contained in section 115 in the conference report that requires the President to submit to Congress at the earliest practicable date, but not later than May 1, 1986, a report on any action taken with respect to the establishment in 1992 of an International Space Year. The report shall include descriptions of possible international missions and related research and educational activities and such other activities as the President may deem appropriate.

16. *Notification and waiting periods.*

The conferees agreed on various provisions for notification of the Congress followed by waiting periods before some action can be taken (see for example sections 101(e), 103, 104, and 204(c)). The conferees further agreed that such waiting periods begin only upon congressional receipt of full and complete notification and not when the notification process is initiated.

17. *Shuttle pricing policy for commercial and foreign users.*

The House bill sets a reimbursement pricing policy for the Space Transportation System for commercial and foreign users consistent with stated objectives of the Space Transportation System.

The Senate bill directs the President or NASA Administrator to report to the congressional authorizing committees on Space Shuttle pricing policy for fiscal years 1989-1991. Further, the policy cannot be implemented before the two committees have had thirty days to review the policy and, where appropriate, recommended legislation establishing a Shuttle pricing policy.

The Conference agreement adopts a pricing policy which sets a base price of $74 million for Shuttle flights starting in 1989.

The conferees view the Space Transportation System as a unique national asset which should be operated by NASA in a manner which will further specific national policy goals.

Those goals include:

(1) The preservation of the role of the United States as a leader in space research, technology, and development;

(2) The efficient and cost-effective use of the Space Transportation System;

(3) The achievement of greatly increased commercial space activities; and

(4) The enhancement of the international competitive position of the United States.

The Shuttle pricing policy adopted by the conferees is designed to give the Administrator of NASA the widest possible flexibility, within certain guidelines, to recover launch costs in a manner which ensures commercial access to space and maintains American preeminence and the U.S. international competitive position.

To accomplish these goals the Committee of Conference has adopted a pricing policy that would allow the Administrator of NASA to:

Set a base price for commercial and foreign users of the Shuttle for flights in 1989 and beyond at not less than $74,000,000 per flight in 1982 dollars.

In order to meet the policy goals in section 202, provide a mechanism to allow the Administrator of NASA to lower the base price, 45 days after notification to the Congress, to not less than additive cost, as defined in sec. 203.

Provide reasonable customer incentives consistent with the policy objectives in Sec. 202..

Preserve separate pricing formulas applicable to commercial and foreign users involved in cooperative research, development and demonstration programs with NASA.

The conferees have provided the Administrator with the authority to offer reasonable incentives to customers and potential customers of the Space Transportation System (Sec. 204(e)). Reasonable incentives should be developed in furtherance of the goals set forth in section 202 and may include discounts for situations where the customer is providing a near term benefit to the government such as multiple uses of the STS capability by a customer, or standby discount arrangements which allow greater flexibility in Shuttle manifesting. Incentives such as reflight guarantees will provide assurance to STS customers that they will have continuity of access to space on reasonable terms, in the event of a mission failure in order to achieve mission success. Customer incentives may also be appropriate in cases where customer commitments support the broader policy objectives of Title II. The authority given to the Administrator in subsection (e) to provide reasonable customer incentives is not authority to reduce the base price set forth in section 204(a); rather, the procedure for reducing the base price is set forth in section 204(c).

Finally, the conferees are concerned that the United States maintain a fully competitive posture in the international marketplace. As a result, the conferees have provided the Administrator of NASA the authority to reduce the $74,000,000 base price by the amount necessary (but to no less than additive cost) to remain competitive. This authority is not granted without considerable thought by the conferees. It is intended as a mechanism to adjust the base price to meet foreign competition if the Administrator determines that there is a trend which indicates that the competition is undercutting the base price. The conferees do not intend that it be used as a mechanism to by-pass the purposes of the Shuttle pricing policy.

The conferees have established requirements that the Administrator report to the Congress annually on how the policy goals of

this legislation are being attained, and that he also report to the Congress at any time the policy goals are not being attained. The Committees of jurisdiction will continue to closely monitor the effects of this legislation as a part of the regular authorization and oversight process.

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